

CLAIMS

What is claimed is:

1. A rotary vane pump, comprising:

a housing having an open end and a closed end defining a pump cylinder therebetween, the closed end having a sound chamber and defining a primary inlet port, a secondary inlet port spaced from the primary inlet port and an outlet port, wherein the outlet port is in communication with an area of compression in the pump cylinder and the primary and secondary inlet ports are in communication with one or more areas of net expansion in the pump cylinder and receive media routed through the sound chamber;

5 a drive motor mounted to the open end of the housing and having a rotatable drive shaft eccentrically disposed in the cylinder;

10 a rotor mounted to the drive shaft and having a plurality of vane grooves opening at a circumference of the rotor; and

a plurality of vanes slidable within the vane grooves and having a leading edge contacting an inner diameter of the cylinder.

2. The pump of claim 1, wherein the sound chamber has a plurality of partitions defining a plurality of cavities, the partitions having passageways for communication of air from an intake port to the primary and secondary inlet ports.

3. The pump of claim 2, wherein air enters the secondary inlet port after passing through at least two of the plurality of cavities.

4. The pump of claim 3, wherein one of the at least two of the plurality of cavities contains a sound filter.

5. The pump of claim 4, wherein the cavity containing the sound filter is located adjacent the intake port.

6. The pump of claim 5, wherein the primary inlet port receives air passing only through the sound filter containing cavity.

7. The pump of claim 1, wherein the closed end of the housing includes a separate end plate containing the primary and secondary inlet ports and the outlet port and a separate end case mounted to the end plate and defining the sound chamber.

8. A rotary vane pump, comprising:

an open ended pump cylinder;

a drive motor mounted to one end of the pump cylinder and having a rotatable drive shaft eccentrically disposed in the cylinder;

5 a rotor mounted to the drive shaft and having a plurality of vane grooves opening at a circumference of the rotor;

a plurality of vanes slidable within the vane grooves and having a leading edge contacting an inner diameter of the cylinder;

10 a end plate mounted to an end of the pump cylinder opposite the drive motor containing an outlet port, a primary inlet port and a secondary inlet port all in communication with an interior of the cylinder; and

15 a sound chamber mounted to the end plate and having an intake port and an exhaust port, wherein the sound chamber is partitioned to define a number of internal cavities and wherein the exhaust port is in communication with the outlet port of the end plate and the intake port is in communication with the primary inlet port and the secondary inlet port of the end plate, wherein air must pass through at least two of the internal cavities to pass from the intake port to the secondary inlet port.